

1. A method of determining which users, from a plurality of users, access to a communications system is to be provided, such access being provided to the plurality of users over a plurality of channels, the method comprising the steps of:

determining, for each of plurality of channels and for each of the plurality of users, a channel measurement feedback characteristic;

determining, for each of the plurality of channels and for each of the plurality of users, a past throughput characteristic; and

determining, a user to be provided access according to the following relationship:

$$k^* = \arg \max_k \{w_k \frac{r_k(t)}{\tilde{r}_k(t)^\alpha}\}$$

where

$r_k(t)$  is the channel measurement feedback characteristic of user  $k$ ;

$\tilde{r}_k(t)$  is the mean throughput of user  $k$ ;

$w_k$  is a weight applied to each of the users;

$\alpha$  is the *Alpha Rule* tuning parameter wherein  $\alpha \neq 0$  and  $\alpha \neq 1$ ; and

$k^*$  is the selected user.

2. The method according to claim 1 further comprising the steps of:

determining, a throughput characteristic for the system;

determining, a fairness characteristic for the system; and

adjusting  $\alpha$ , as a result of the determined throughput characteristic and the determined fairness characteristic.

3. The method according to claim 2 further comprising the steps of:

comparing, the determined throughput characteristic for the system with a target throughput characteristic;

comparing, the determined fairness characteristic for the system with a target fairness characteristic.

4. The method according to claim 3 wherein the adjusting step further comprising the steps of:

decrementing  $\alpha$ , by a predetermined amount, when the determined throughput characteristic for the system is  $\leq$  the target throughput characteristic and the determined fairness characteristic for the system is  $\geq$  the target fairness characteristic.

5. The method according to claim 3 wherein the adjusting step further comprising the steps of:

incrementing  $\alpha$ , by a predetermined amount, when the determined throughput characteristic for the system is  $\geq$  the target throughput characteristic and the determined fairness characteristic for the system is  $\leq$  the target fairness characteristic.

6. The method according to claim 3 wherein the adjusting step further comprising the steps of:

adjusting the targets, by a predetermined amount, when the determined throughput characteristic for the system is  $\leq$  the target throughput characteristic and the determined fairness characteristic for the system is  $\leq$  the target fairness characteristic.

7. The method according to claim 3, wherein the throughput characteristic is determined according to the following relationship:

$$\tilde{R} = \sum_{k=1}^K \tilde{r}_k(t)$$

where

$\tilde{r}_k(t)$  is the mean throughput of user  $k$ .

8. The method according to claim 3, wherein the fairness characteristic is determined according to the following relationship:

$$\tilde{F} = \frac{(\sum_{k=1}^K \tilde{r}_k(t))^2}{(K \sum_{k=1}^K \tilde{r}_k(t)^2)}$$

where

$\tilde{r}_k(t)$  is the mean throughput of user  $k$ ; and

$K$  is the total number of users.

9. The method according to claim 4, wherein  $\alpha$  is decremented by a percentage of its present value.

10. The method according to claim 5, wherein  $\alpha$  is incremented by a percentage of its present value.

11. The method according to claim 9, wherein the percentage that  $\alpha$  is decremented by is between 0% and 100%.

12. The method according to claim 10, wherein the percentage that  $\alpha$  is incremented by is between 0% and 100%.

13. The method according to claim 2, wherein the adjusting of  $\alpha$  is performed in real-time.